

# Coal

CSA Global is able to draw on a depth of experience and expert knowledge from geoscientists with over 40 years in the coal business. Much of our collective coal experience has been gained in the more complex geological environments in Indonesia and Western Australia, while Underground Coal Gasification (UCG) projects have been engaged in both Australia and Hungary.

Our UCG projects involve targeting and evaluation at a Pre-Feasibility Study (PFS) level. In addition to managing exploration programs, resource and reserve estimations (JORC 2012), mine design and scheduling, CSA Global provides advice on coal quality and ranking, coal processing and the valuation of early stage acquisition targets.

## Recent Projects

NATION	PROJECT	WORK COMPLETED	
	Australia	Canning Basin (WA)	Coal exploration potential study.
		Salmon Gums (WA)	Management of data, exploration and resource development, Lignite.
		Various (QLD)	Due diligence and reviews of EPC's in the following Queensland basins; Bowen, Surat, Styx, Maryborough, Galilee and Drummond.
		Wilga (WA)	Resource estimation.
	Colombia	Cataumbo & Urba	Project review.
	Hungary	Izabella	Exploration target estimate and UCG.
		Mecsek	Pecs and Varalija resource estimation and UCG studies.
	Indonesia	Aifat	Papua, drill planning, supervision and resource estimation.
		BAS	Resource and reserve estimation.
		Bengalon	Resource and reserve estimation, drill strategy and supervision.
		Bengkulu	Operations review and on-site support.
		BJU	Exploration target report.
		BOSS	Due diligence review and resource estimation.
		GBU	Pit optimisation and mine plan review.
		KST (Mercuria)	Due diligence studies and reserve estimation.
		MAS	Resource and reserve estimation.
		Melak (Banpu)	Due diligence study and resource estimation.
		Moriss Mine (Noble)	Overburden dredging study and geological modelling.
		Pinang Coal (Noble)	Project evaluations.
		PLN (State Electricity)	Coal project reviews, development strategy and drill planning.
		SAB	Coking coal, project management and resource estimation.
		TCM (Banpu)	Resource estimation training.
		TKS	Valuation and Qualified Persons Report (SGX).
		Tuhup2	Coking coal, drill planning and supervision, resource estimation and PFS.
	Kyrgyzstan	Kara Keche	Project and operations review.
	Mongolia	Nuurst	Resource estimation (0.5 Bt), drill program supervision and training.
		Ovoot	Resource estimation (0.3 Bt), drill program management, coking coal.
		Tenuun	Resource estimation.
		Tsagaan Tогоi	Strategy, drill planning, geological modelling and site support.
		Tsant Uul	Resource estimation (0.2 Bt).
		Uunst Khudag	Resource estimation (0.7 Bt).
	Mozambique	Tete & Niassa	Project review.
	South Africa	Karoo Basin	Project review of five exploration targets.
	USA	Jonesville (Alaska)	Project review.



Resource  
Industry  
Consultants

CSA Global has been providing innovative and practical solutions to the resource industry since 1984. During this period, CSA Global has worked on projects on all continents and across all mineral commodities.

CSA Global has specialist knowledge and experience in the coal sector, working on projects at all stages of the mining cycle around the world including Australia, South East Asia and Mongolia.

## About CSA Global

We are a leading geological, mining and management consulting company with 30 years experience in the international mining industry. We cover all stages of the exploration and mining cycle, all mineral commodities, all extraction methods, across all regions:

### EXPLORATION

- Mineral systems targeting & project generation
- Remote sensing & geophysics
- Geochemistry (traditional & non-destructive methods)
- Mapping & field investigations
- Drill program planning & supervision
- Exploration strategy & project management

### MINING

- Mining & engineering studies (concept to feasibility)
- Reserve assessment reviews
- Mine optimisation, scheduling & design
- Ore Reserve estimation & reporting
- Grade control & reconciliation
- Productivity improvement & project management

### CORPORATE

- Project reviews
- Due diligence
- Expert valuations
- Independent reports
- Geo-corporate advice
- Secure information hosting (Spring portals & data rooms)

### RESOURCES

- Review of data collection techniques & QAQC of data
- Geological & geo-metallurgical modelling
- Geostatistical analysis & variography
- Mineral Resource estimation, validation & classification
- Resource reporting in accordance with international codes
- Resource audits & risk analysis

### DATA

- Sourcing, capture, validation & QAQC of data
- Database design, setup, management & hosting
- Cartography, GIS & web-mapping
- Production databases & management tools
- Online information management systems (Spring portals & data rooms)
- IT support, systems administration & training

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